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## PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:  
JEFFREY M. BECKER  
HAYNES AND BOONE, LLP  
1000 LOUISIANA, SUITE 4300  
HOUSTON, TX 77002

**PCT**

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT  
OR THE DECLARATION

(PCT Rule 44.1)

Date of Mailing

(day/month/year)

22 JAN 2002

Applicant's or agent's file reference  
25791.47.02

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.  
PCT/US01/28960

International filing date

(day/month/year)

17 September 2001 (17.09.2001)

Applicant  
SHELL OIL COMPANY

1. ☒ The applicant is hereby notified that the international search report has been established and is transmitted herewith.  
**Filing of amendments and statement under Article 19:**  
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

**When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the international search report; however, for more details, see the notes on the accompany sheet.

**Where?** Directly to the International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland  
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau.  
If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in rules 90 bis 1 and 90 bis 3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231  
Facsimile No. (703)305-3230

Authorized officer

Hoang Dang

Diane Smith f

Telephone No. 703-308-2168

Form PCT/ISA/220 (July 1998)

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 25791.47.02	<b>FOR FURTHER ACTION</b>	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US01/28960	International filing date (day/month/year) 17 September 2001 (17.09.2001)	(Earliest) Priority Date (day/month/year) 18 September 2000 (18.09.2000)
Applicant SHELL OIL COMPANY		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

#### 1. Basis of the Report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (See Box II).

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/28960

### Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐  
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/28960

### Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

#### NEW ABSTRACT

An apparatus and method for forming or repairing a wellbore casing, a pipeline, or a structural support is disclosed. An expandable tubular member (20a) is radially expanded and plastically deformed by an expansion cone (18) that is displaced by hydraulic pressure. Before or after the radial expansion of the expandable tubular member (20a), sliding sleeve valve (42) within the apparatus permit a hardenable fluidic sealing material to be injected into an annulus between the expandable tubular member (20a) and a preexisting structure.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/28960

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : E21B 23/00, 33/14

US CL : 166/277, 382, 177.4, 206, 207, 242.2

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 166/277, 382, 177.4, 206, 207, 242.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,718,288 A (BERTET et al) 17 February 1998 (17.02.1998), Figures 3B, 3C and 6-6C.	18, 19, 45 and 46
A	US 3,477,506 A (MALONE) 11 November 1969 (11.11.1969), Figures 1-7.	1-54
X	US 5,337,823 A (NOBILEAU) 16 August 1994 (16.08.1994), Figures 8-12 and column 12, line 56 through column 13, line 6.	18 and 45
A	US 5,667,011 A (GILL et al) 16 September 1997 (16.09.1997), see the entire patent.	1-54
A	US 5,901,789 A (DONNELLY et al) 11 May 1999 (11.05.1999), Figures 1-6.	1-54
A	US 6,012,523 A (CAMPBELL et al) 11 January 2000 (11.01.2000), see the entire patent.	1-54

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

28 November 2001 (28.11.2001)

Date of mailing of the international search report

22 JAN 2002

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703)305-3230

Authorized officer

Hoang Dang

*Diane Smith*

Telephone No. 703-308-2168

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/28960

### BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-17, 20-44 and 47-54, drawn to either a method or apparatus for forming a wellbore casing within a borehole within a subterranean formation or a method or apparatus for coupling an expandable tubular member to a preexisting structure.

Group II, claim(s) 18, 19, 45 and 46, drawn to an apparatus for forming a wellbore casing in a borehole in a subterranean or an apparatus for coupling an expandable tubular member to a pre-existing structure.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special technical feature for the claims of Group I is the arrangement including valves and fluid passages within the running tool which allows the tubular member to be expanded and cemented. The special technical feature of the claims of Group II is the combination in a single downhole tool of a means for expanding a tubular member and a means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the wellbore.

**CHAPTER I**  
**PCT TELEPHONE MEMORANDUM**  
**FOR**  
**LACK OF UNITY OF INVENTION**

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PCT No.: PCT/US01/28960

Examiner: Hoang Dang

Attorney spoken to: Todd Mattingly

Date of call: 28 November 2001

- ☒ Amount of payment approved: \$210.00
- ☒ Deposit account number to be charged: 08-1394
- ☒ Attorney elected to pay for ALL additional inventions
- ☐ Attorney elected to pay only for the additional inventions covered by
  - ☐ Group(s):
  - encompassing --
  - ☐ Claim(s):
- ☐ Attorney elected NOT to pay for any additional inventions, therefore, only the first claimed invention (Group I) covered by Claim(s) \_\_\_\_\_ has been searched.
- ☒ Attorney was orally advised that there is no right to protest for any group not paid for.
- ☒ Attorney was orally advised that any protest must be filed no later than 15 days from the mailing of the Search Report (PCT/ISA/210).

**Time Limit For Filing A Protest**

Applicant is hereby given 15 days from the mailing date of this Search Report in which to file a protest of the holding of lack of unity of invention. In accordance with PCT Rule 40.2, applicant may protest the holding of lack of unity only with respect to the group(s) paid for.

**Detailed Reasons For Holding Lack of Unity of Invention:**

Please See Continuation Sheet

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*Note: A copy of this form must be attached to the Search Report.*

**ATTACHMENT TO CHAPTER I PCT TELEPHONE MEMORANDUM  
FOR  
LACK OF UNITY OF INVENTION**

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**Continuation of Detailed Reasons For Holding Lack of Unity of Invention:**

Group I, claim(s) 1-17, 20-44 and 47-54, drawn to either a method or apparatus for forming a wellbore casing within a borehole within a subterranean formation or a method or apparatus for coupling an expandable tubular member to a preexisting structure.

Group II, claim(s) 18, 19, 45 and 46, drawn to an apparatus for forming a wellbore casing in a borehole in a subterranean or an apparatus for coupling an expandable tubular member to a pre-existing structure.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special technical feature for the claims of Group I is the arrangement including valves and fluid passages within the running tool which allows the tubular member to be expanded and cemented. The special technical feature of the claims of Group II is the combination in a single downhole tool of a means for expanding a tubular member and a means for injecting a hardenable fluidic sealing material into an annulus between the expandable tubular member and the wellbore.

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*Note: A copy of this form must be attached to the Search Report.*